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BULLETIN

OF THE NATIONAL TUBERCULOSIS ASSOCIATION

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WILHELM CONRAD ROENTGEN
DISCOVERS X-RAY—NOV. 8, 1895

ACROSS THE EDITOR'S DESK

X-Ray

Fifty years have passed since Roentgen's discovery of the X-ray in 1895. Roentgen's ray made possible the modern tuberculosis program. X-rays have penetrated the shelter of the nursery and the walls of schools and colleges. They are now focused upon the chests of the adult population.

An anniversary makes one want to look forward. Gone is the Victorian concept of the "pre-tuberculous" child whose resistance was augmented by ample doses of cod liver oil and gallons of milk. To the past belongs the idea of "childhood type" tuberculosis that flared up in adult life.

Tuberculosis, in the middle of the twentieth century, has become predominantly adult disease. This fact is not easily appraised if one's early professional training goes back to the beginning of our campaign.

In 1945 we look for TB in the adult population. X-ray programs deal with:

1. Persons who live or work with someone who has active TB.
2. Medical and nursing students, college students, physicians and nurses, hospital attendants, patients admitted to general hospitals.
3. Working men and working women, especially those in poorly paid occupations.
4. Men and women, 45 years of age and over, from all walks of life.
5. Young women in industry, young mothers and teachers.
6. Special groups, such as diabetics, Negroes, Mexicans and other Spanish-speaking persons, Indians, Chinese, relief groups, inmates of institutions for mental defectives, prisons.

The 1945 TB program identifies early diagnosis with X-raying apparently healthy people. Modern X-ray surveys are nothing like the well-established diagnostic chest clinics for the sick; X-ray surveys are for people who are apparently in good health.

Chance played no part in Roentgen's discovery of the X-ray. On the contrary, the discovery was made during a systematic search for the kind of radiation which would penetrate matter opaque to ordinary light.

We can pay no better tribute to Roentgen's memory than to apply his discovery to our tuberculosis program in a systematic fashion. Early diagnosis must not be left to chance. X-ray surveys are the tool for systematic search.

—*William A. Doppler, Director, Industrial Relations,* NTA.

The Problem Today

Some half-million Americans have active tuberculosis. Only about 300,000 are known cases. The remaining 200,000 must be discovered and given competent medical care—for their own sake, for the safety of others and for the national welfare. And to care for all these 200,000 patients as they are diagnosed, more TB hospitals must be built.

The problem can be solved through the combined efforts of the people and the official and voluntary agencies.

BULLETIN

OF THE

NATIONAL TUBERCULOUS ASSOCIATION

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The editors welcome articles for possible publication. If an article deals with a subject on which there may be differences of opinion, THE BULLETIN will be glad to consider presentation of varying opinions in the same or subsequent issues.

ELLEN LOVELL, *Editor*
ELIZABETH HODGSON, *Associate Editor*

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Fifty Years of X-Ray

A Priceless Gift Was Given Mankind when Wilhelm Conrad Roentgen Discovered Invisible Rays Nov. 8, 1895—The X-ray Has Become One of the Physician's Chief Diagnostic Aids and a Mighty Weapon in TB Control

THIRTEEN years after Robert Koch discovered the tubercle bacillus and proved conclusively that tuberculosis is caused by this bacillus, and only by it, another scientific discovery was made which was to become one of the principal weapons in the campaign to control tuberculosis.

November 8 will mark the fiftieth anniversary of the discovery of this powerful weapon—the X-ray.

When Wilhelm Conrad Roentgen, working quietly in his laboratory in Wurzburg, Bavaria, succeeded in producing a new kind of radiation on Nov. 8, 1895, he presented man with a priceless gift. It was a gift which was to be used with increasing effectiveness in future years to aid scientists in the age-old struggle against disease.

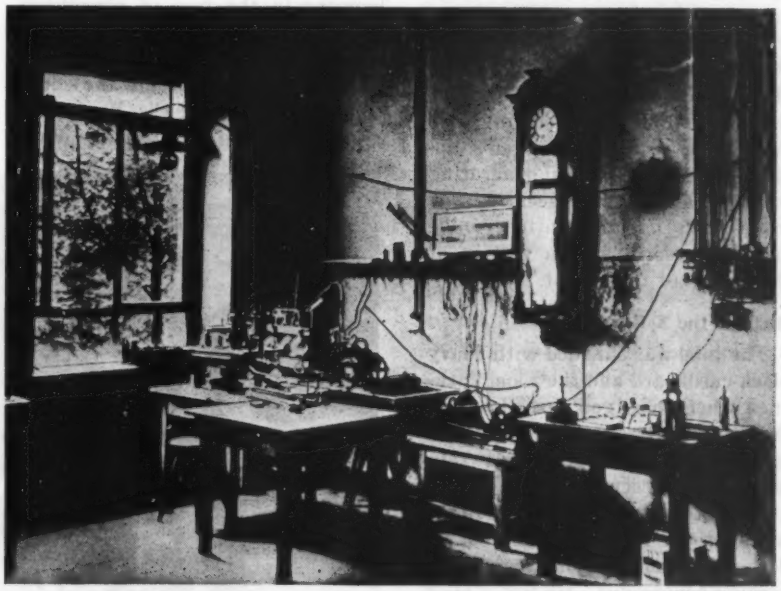
Key to Diagnosis

Roentgen may not have been able to predict all the purposes for which his discovery would be used, but as a physicist he must have realized he had found the key which would open the way for doctors to diagnose baffling physical ailments.

It is doubtful, however, if Roentgen could have foreseen the day when his invisible light would be produced by machines capable of taking pictures of the human lung at the rate of three a minute, that it would be used in the treatment of certain diseases, that industry would employ it to detect defects in its manufactured products.

Wilhelm Conrad Roentgen was born March 27, 1845, in Lennep, Germany. When he was three years old his parents moved to Apeldoorn, Holland, where he obtained his early schooling.

After studying at the Utrecht Technical School, in 1865 he entered the University of Utrecht but later the same year transferred to the Polytechnical School at Zurich, Switzerland, where he studied under the experimental physicist, August Kundt.



General Electric Photo

Roentgen's laboratory in Wurzburg, Bavaria. While experimenting in this workshop, Roentgen discovered the X-ray which is now used throughout the world in diagnosing tuberculosis.

In 1868 Roentgen received his diploma as a mechanical engineer. Continuing his studies, the following year he obtained his Doctor of Philosophy degree and became Kundt's assistant at the university. Two years later he went with Kundt to the University of Wurzburg and again accompanied the professor when the latter was called to the University of Strassburg in 1872. In the same year, Roentgen married Bertha Ludwig, whom he had met in Zurich.

When Roentgen was 30 years old, in 1875, he was offered the professorship of physics and mathematics at the Agricultural Academy at Hohenheim in Wurttemberg. He later became professor of physics at the University of Giessen in Hessen and, in 1888, accepted the position of professor of physics and director of the new Physical Institute at the University of Wurzburg, Bavaria.

It was at Wurzburg that Roentgen began his experiments with cathode rays which were to lead to his discovery of the "unknown ray" powerful enough to penetrate opaque material and destined to have such a profound effect on medical science.

Simple Laboratory

There was nothing pretentious about Roentgen's laboratory. High windows permitted ample light to fall upon the table shelf at which the physicist worked. Materials and equipment were kept on two tables or stored in a cabinet. A stove in the center of the room provided heat.

Much of the apparatus Roentgen

used he made himself. Usually, he worked alone. It is believed that no assistant was with him the night he made his famous discovery.

In carrying out his experiments, Roentgen had the advantage of information gleaned from earlier research of other scientists. Such men as Farraday, Plucker, Hittorf, Hertz and his pupil, Lenard, and Crookes had made important discoveries concerning the nature of electricity and the effect produced by high-tension currents in a vacuum tube.

Crookes had invented the vacuum tube which Roentgen was using that Friday night, Nov. 8, 1895, when he first observed invisible rays. The rest of Roentgen's apparatus consisted of a generating machine and a fluorescent screen made with barium platinocyanide crystals, according to a version of the events of that night.

Birth of the X-Ray

The tube was shielded with heavy black cardboard and the room darkened when Roentgen turned on his generator and sent an electric current through the tube. A glow appeared on the screen.

Since there was no visible light in the room for the screen to reflect, Roentgen knew he had found a new phenomenon. He put a book between the tube and the screen but the glow remained. He held a piece of wood, then his hand, in front of the screen. The glow was still apparent. Whatever this new thing was, it could penetrate objects opaque to ordinary light. He substituted a photographic plate for the screen and took a picture of his wife's hand. It was the first X-ray picture.

Roentgen, the scientist, did not rush to tell the world about his discovery. He continued his experiments. He worked in his laboratory for weeks. Not until he was completely satisfied of the correctness of his conclusion did he report on the ray which could not be seen with the eye, but the effect of which could be seen.

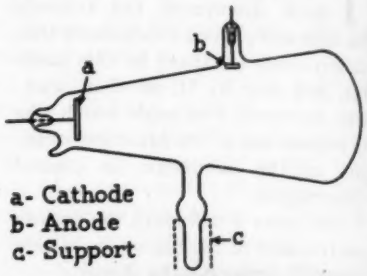
Late in December Roentgen presented his "Preliminary Communication" on the phenomenon to the president of the Physical Medical Society of Wurzburg. On January 23, 1896, he read a paper before the society on "A New Kind of Ray." He did not attempt to name his rays but called them simply "X," for the unknown quantity.

World-Shaking

The world was shaken by Roentgen's discovery. And as so often happens in the face of something new, various schools of thought arose concerning the strange ray. There were those who saw the scientific implications of the X-ray and realized it could revolutionize diagnostic methods in the field of medicine.

There were others who predicted nothing but evil would come from this ray by means of which pictures could be taken through matter. A law was passed in New Jersey prohibiting the use of X-ray glass in opera glasses. One merchant advertised "X-ray proof underclothing."

The prevailing opinion, however, was a sober recognition of an invaluable contribution to mankind. Roentgen was acclaimed and honored, and in 1901 was awarded the Nobel prize for physics, but to the day of his death, Feb. 10, 1923, he sought no personal reward or monetary gain from his discovery.



General Electric Photos

The simple Crookes tube (upper right), used in making the first X-ray picture, has been superseded by the unit with an interchangeable camera back which may be adjusted for use with various types of film.

The tube used by Roentgen in his successful experiment was a Crookes vacuum tube, pear shaped, with metal electrodes—a cathode and an anode—attached to the terminals of an induction coil. When electrons were shot from the cathode, or negative electrode, such was the speed that most of them by-passed the

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TB in German Prison Camps

Scanty Records Prevent Accurate Count but Toll Apparently Heavy—Disease Spread Fostered by Overcrowding and Malnutrition—American General Hospitals Cited for Excellent Care

By COL. ESMOND R. LONG, M.D.

A HIGH incidence of tuberculosis was discovered in military and civilian prisoners of allied and other European nations, who were liberated by the United States Army in Western Germany shortly before the end of the war in Europe. The prevalence was so great as to suggest a grave spread of tuberculosis as a result of the conditions of imprisonment.

A precise determination of the incidence of the disease in prisoner camps is impossible, however, because of the manner in which the ill became concentrated. When the Germans retreated they took ablebodied military prisoners with them, leaving behind hospitalized prisoners and various other non-effectives. Repeatedly, whole hospitals with large numbers of sick Russian, Polish, Jugoslav and Italian former soldiers fell to the care of our Army. A high percentage of these hospitalized prisoners proved to be tuberculous.

American Hospitals Designated

In the early phase of operations in Western Germany, before more lasting arrangements could be established, the Chief Surgeon of the European Theater of Operations designated several American general hospitals to take care of recovered allied military prisoners. Almost all general hospitals in the theater, however, ultimately received a few of these recovered prisoners, as a result of the exigencies of rapid evacuation from front-line hospitals.

One large general hospital was ultimately devoted almost entirely to their care.

The treatment given, while temporary, pending repatriation of the recovered prisoners to their own countries, was excellent. An important part of it was educational, with the aim of indoctrination on the danger of dissemination of the disease.

It is a gratifying fact that no comparable incidence of tuberculosis was discovered in recovered American prisoners of war.

Civilian Prisoners

The incidence of tuberculosis in the concentration camps which housed civilian prisoners was also very high. At the notorious Buchenwald camp, for example, near Weimar, Germany, large numbers of tuberculous patients were found under treatment at the time of the camp's liberation.

A medical service, operated by prisoner physicians, had been established long before the liberation, and, after the camp was freed, this organization was much improved under United States military supervision. General case-finding facilities were highly limited, however, and all physicians agreed that unrecognized cases abounded in the camp.

Conditions Favor Disease

The conditions of existence in these camps were favorable, in every way, to the development and spread of tuberculosis. The combination of crowding, malnutrition and harsh treatment furnished an ideal medium for its propagation. Prisoners were herded in close quarters in insanitary barracks, and the spread of tuberculosis by direct contact must have been extremely frequent. Malnourishment characterized all of these camps and had a far-reaching effect on resistance to all disease.

Medical records for the camps are fragmentary and a breakdown of the causes of death cannot now be made. The trend of mortality after the liberation, however, was such as to indicate that tuberculosis was one of the chief causes of death.

It is reasonable to believe that a large proportion of the hundreds of bodies found awaiting cremation in these camps on their liberation, and now familiar through press photographs of the camps, represented death from tuberculosis.

Post-Liberation Care Praised

At Buchenwald the 45th Evacuation Hospital, operating under a plan laid down by the Surgeon of the First Army, evacuated approximately 500 tuberculous patients for care shortly after the liberation. The manner in which this operation was conducted was superb. The gratitude of the patients themselves was extreme, and the efficiency with which the evacuation was made and care established drew a high tribute from a number of distinguished foreign physicians who were themselves inmates of the camp.

It is inescapable that the Nazi concentration camps created a grave source of dissemination of tuberculosis in Europe. Disease contracted there, and now in its incipiency, may be expected to develop for months or years after the

THE AUTHOR

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general repatriation, which is in its initial phase now. The recognition and control of tuberculosis in men returning from these concentration camps will be a problem for the health officers of every country whose nationals were imprisoned.

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MT. McGREGOR SAN SOLD AS VETERANS REST CENTER

The tuberculosis sanatorium at Mount McGregor, N. Y., maintained since 1913 by the Metropolitan Life Insurance Company for treatment of its tuberculous employees, has been sold to the State of New York for a veterans' rest center. Announcement of the purchase was made recently by Gov. Thomas E. Dewey who stated that the center will be used for veterans in need of readjustment on a temporary basis and who are not eligible for federal hospitalization.

Lack of patients and the shortening of the period of treatment were the reasons given by the company for the sale. Patients now at the sanatorium will be transferred to other sanatoriums located nearer to their homes and will continue treatment at the company's expense.

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LOS ANGELES X-RAYS 13,000 AVIATION WORKERS

More than 13,000 persons have been X-rayed at North American Aviation plants by the mobile X-ray unit of the Los Angeles County (Calif.) Tuberculosis and Health Association. The surveys have been made as part of the association's industrial health program.

Final results on the X-rays have been announced by the association as follows: 12,510 negative, or without any signs of tuberculosis; 243 with suspicious shadows who must be examined further before the possibility of tuberculosis can be ruled out; 177 with abnormal heart shadows needing further study, and 147 with other findings.

ERIE ASSOCIATION BUYS X-RAY UNITS FOR HOSPITALS

Two 4" x 5" stereoscopic X-ray units have been purchased by the Erie County (Pa.) Health and Tuberculosis Association, according to a recent news release from the association.

The units will be installed at Hamot and St. Vincent hospitals in Erie, Pa., and will be used for the routine chest X-raying of all patients and hospital personnel.

The equipment will be maintained by the hospitals and reports of the examinations will be submitted to the association.

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VIRGINIA SECRETARIES ORGANIZE CONFERENCE

Executives of tuberculosis associations in Virginia recently organized a Virginia Conference of Tuberculosis Secretaries and elected Miss Nora S. Hamner, executive secretary of the Richmond Tuberculosis Association, as the first president.

Other officers are: Mrs. Doris D. Tompkins, of the Portsmouth Tuberculosis Association, vice president, and John Page Jones, of the Lynchburg-Campbell County Tuberculosis Association, secretary-treasurer.

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TEXAS COUNTY ASSN X-RAYS LATIN-AMERICANS

Four X-ray clinics for Latin-American groups were held in Fort Worth, Texas, during July by the Tarrant County Tuberculosis Society. Seven hundred and seventy-three persons were X-rayed.

Educational programs explaining the "what" and "why" of the X-rays preceded the clinics which were held in three different sections of the city.

Here and There, bulletin of the Texas Tuberculosis Association, states that four films showed tuberculosis and that 15 were suspect.

MASS X-RAY APPROVED BY COLLEGE OF RADIOLOGY

Approval of the principle of mass chest X-ray surveys for public health purposes was made public recently in a news letter of the American College of Radiology following a conference with Dr. Herman E. Hilleboe, Chief, Tuberculosis Control Division, U. S. Public Health Service.

Resolutions, indorsing the mass use of X-ray in detecting pulmonary tuberculosis, included recommendations that "films should be examined by physicians who are trained and competent to interpret radiographs of the chest," and that "cases showing abnormalities should be immediately referred for further study and care to local physicians, or, when this is impractical, to other available agencies."

The membership of the college is composed of diplomates of the American Board of Radiology, practising the specialty of radiology and holding membership in American or Canadian medical associations.

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RURAL COUNTY USES USPHS UNIT IN SURVEY

The first rural county in Missouri to have the use of transportable miniature X-ray equipment is Pemiscot County where an X-ray survey was recently completed.

According to *M. T. A. News*, organ of the Missouri Tuberculosis Association, the survey was made with 35 mm. X-ray equipment loaned by the U. S. Public Health Service under the direction of Dr. F. Kenneth Albrecht, USPHS. Preliminary educational work was done by the Pemiscot County Tuberculosis Association.

Results of the survey have not as yet been released.

FRONT COVER

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Chemotherapy in Tuberculosis

Rest Therapy Remains Fundamental Remedy But Age-Old Search for Specific Continues—Patients Warned Against Refusal of Well-Established Methods of Treatment

By H. CORWIN HINSHAW, M.D., and
WILLIAM H. FELDMAN, D.V.M.

EFFORTS to develop an effective medicinal treatment for tuberculosis have been under way ever since this great human pestilence was recognized. The writings of ancient physicians contain repeated reference to herbs and other natural products alleged to be of therapeutic value. When Ehrlich and his contemporaries learned of the value of metallic salts in treatment of syphilis and parasitic diseases, hope was revived that some such preparation might be of aid in treating tuberculosis. The use of gold salts appears to have been an outgrowth of this line of research, but treatment with these has not withstood the test of time.

The unprecedented success of the sulfa drugs in treatment of many bacterial diseases of man renewed hope that tuberculosis might eventually yield to some such drug, and experiments on guinea pigs have given definite support to these hopes. Guinea pigs are extremely susceptible to tuberculosis and the experimentally produced disease in these animals has been studied most extensively in laboratories all over the world. In 1939 and 1940 the sulfonamide drugs were shown to have some retarding effect on the rate of development of tuberculosis of guinea pigs, but in no instance was the disease actually arrested by administration of sulfonamide drugs or any of their predecessors.

Sulfone Series

The drugs of the sulfone series (promin, diasone and promizole) were the first preparations to succeed in actually arresting tuberculosis in the highly susceptible guinea pig. This naturally led to high hopes that sulfone drugs might be of value in the treatment of tuberculosis of human beings. Several hundred patients who had tuberculosis have now received treatment with these drugs and experience has tempered the early enthusiastic hopes of some physicians.

Most sulfone drugs, unfortunately, have a much more toxic effect on human beings than on guinea pigs. This restricts the amount of treatment which can be given to patients with comfort and safety. There is some reason to believe also that some sulfone drugs are altered in the human body and become ineffective. The possibility that sulfone drugs may be of aid in treatment of certain unusual varieties of human tuberculosis has not been excluded, but no definite place has been found for these drugs in treatment of the usual types of tuberculosis. The use of sulfone drugs under any circumstances has not progressed beyond the experimental stages.

The only sulfone drug which has been approved by the Federal Drugs Administration for sale is promin, which is available in jelly form for application on the surface of external lesions of tuberculosis, and a solution of promin which is available in ampules for intravenous administration in treatment of leprosy. The effectiveness of promin has not been completely established even for these special uses.

The amazing success of penicillin in treatment of several infectious diseases again roused hopes that this or a similar antibiotic substance might be developed which would be effective against tuberculosis. Penicillin itself appears to have no effect on tuberculosis in guinea pigs or in man, but many other substances may be extracted from living micro-organisms which can suppress the growth of bacteria which produce disease. Of these only streptothricin and streptomycin need be considered at present.

Streptothricin and Streptomycin

Streptothricin is derived from a soil-inhabiting fungus (Actinomyces lavendulae) and is effective in restraining the growth of tubercle bacilli in test tubes. Unfortunately, this substance is somewhat toxic to guinea pigs and furthermore is not effective in restraining

THE AUTHORS

H. Corwin Hinshaw, M.D., is first assistant in medicine, Mayo Foundation, University of Minnesota Medical School. A graduate of the University of Pennsylvania, Dr. Hinshaw was associate professor of parasitology and acting professor of bacteriology at the American University of Beirut School of Medicine, Beirut, Syria, from 1930 to 1931, and entered the Mayo Foundation in 1933 as a fellow in medicine. He has contributed many articles to scientific periodicals and is a member of the American Medical Association, the Society for Experimental Biology and Medicine, and the American Trudeau Society (chairman of the Committee on Therapy).

William H. Feldman, D.V.M., is associate professor of comparative pathology, The Mayo Foundation, Rochester, Minn. He is the author of more than 100 contributions to scientific journals and has written two books, "Neoplasms of Domesticated Animals," 1932, and "Avian Tuberculosis Infections," 1938. Dr. Feldman is a graduate of the Colorado Agricultural College and a member of the American Association of Pathologists and Bacteriologists, the American Society for Experimental Pathology, and the American Veterinary Medical Association. He is an honorary member of the American Trudeau Society.

the development of tuberculosis in these animals. Streptomycin is similar in many respects to streptothricin and is also derived from a soil fungus (Actinomyces griseus). It, too, inhibits the reproduction of tubercle bacilli in test tubes. It is well tolerated by guinea pigs and extensive investigation has demonstrated that this drug, unlike streptothricin, does inhibit the development of experimental tuberculosis in these animals. Furthermore, it has been clearly shown that treatment with streptomycin apparently will eradicate well-established tuberculosis in about a third of the guinea pigs treated. In the remaining two-thirds of the animals treated with it the disease will improve to a stage which can be regarded as arrested tuberculosis.

Obstacles To Be Faced

Adequate study of streptomycin in treatment of human tuberculosis remains to be accomplished and it is well to point out the obstacles which lie in the path of further progress along this line. The probable limitations of treatment of the commoner varieties of tuberculosis with any drug will be examined closely first. Next we shall consider briefly the legal restrictions placed on distribution of drugs which have not yet been proved effective and safe. Finally we shall mention the methods by which information about new discoveries are made available to the medical profession and to patients so that no patient need fear he is being denied an effective remedy.

Many students of tuberculosis believe that results comparable to those noted in acute diseases, such as pneumonia, should not be anticipated in treatment of this disease with drugs. In pneumonia the infection has been present for a few days at most, the inflamed tissues of the lungs are intact and when the drug restrains further multiplication of the pneumococci, the human body promptly recovers in a manner resembling the natural crisis of pneumonia. In other diseases, also, successful treatment with drugs merely permits recovery by natural processes, and the promptness of such recovery depends on the nature of the disease process and the defensive powers of the patient.

Healing Process Slow

Tuberculosis, however, often is a chronic disease which produces destructive changes in tissues. Healing or repair of these tissues is exceedingly slow. Furthermore, in extensive tuberculosis of the lungs which has been progressive for long periods the destructive changes impose serious mechanical handicaps to the healing process. When such mechanical handicaps are present, it is logical to utilize a corrective mechanical type of treatment, such as the conventional surgical collapse procedures rather than treatment with a drug. The patient who is faced with the necessity of surgical treatment, therefore, should not hope for any alternative chemical remedy and we would urge him to proceed with the contemplated operation without unnecessary delay.

The beneficial effect of rest therapy, usually in the planned environment of a sanatorium, will probably remain as the fundamental remedy for tuberculosis. No drug now available is likely to supplant rest completely and at this time of uncertainty it would appear foolish for any patient with tuberculosis to discard the known benefits of rest treatment for the uncertainties of treatment with a new drug. Should an effective drug be developed, it is certain that sanatoriums will be among the first to make use of such treatment and will become the most important centers of such treatment.

Legal Safeguards

Patients who have tuberculosis as well as those with other diseases are frequently eager to receive newly developed drugs even when the hope of benefit is remote. Usually it is impossible to secure such drugs under these circumstances because of legal restrictions which have been imposed in recent years. These laws are designed to prevent unwise distribution of drugs whose safety and efficacy have not been determined, and they also serve to conserve the supply of rare and valuable drugs in order that the essential research may be carried out.

The distribution of new drugs for the necessary preliminary, laboratory and clinical trials is entirely in the hands of the manufacturers. Investigators receiving drugs for this purpose must have proper facilities to carry out the contemplated research accurately and safely. They also may be called on to account for all of the drug supplied and to submit complete reports of their researches which eventually are forwarded to the Federal Security Agency. This makes it impossible for research workers to share their supplies of new drugs before the necessary research is completed to prove their safety and effectiveness.

Reporting Results

Patients and their relatives are not always well informed as to the methods by which new scientific developments become known to physicians and research workers. The channels through which such information flows are direct and dependable. When a research worker has completed a project, he submits a report to the editors of one of the many medical and scientific journals and usually publication of the results of his work follows within a few months. The journal is distributed to all medical libraries and to many physicians and scientists directly. This enables other research workers and physicians to utilize promptly any of these new facts either in treatment of patients or in the development of new scientific information. The prompt publication of results is an ethical responsibility of the scientist to aid others engaged in similar problems. Patients need not fear that they

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V. J. SALLAK TO DIRECT PERSONNEL SERVICES, NTA

V. J. Sallak, of the Program Development Service, National Tuberculosis Association, was appointed director of personnel services on June 12. He is in charge of personnel recruiting, training and placement.

Mr. Sallak joined the staff of the NTA in the summer of 1942 as field secretary for the Rehabilitation Service, where he remained until February of 1944. Since that time he has been field secretary in the Program Development Service.

Prior to his association with the NTA, Mr. Sallak was for four years executive secretary of the Secondary Education Department, The School of Education, New York University. He also served as an instructor in the same department. His other educational experience was gained in secondary school teaching and guidance work in Massachusetts and New York.

Mr. Sallak attended McBurney School, New York, received his AB degree from Wabash College, Crawfordsville, Ind., and his master's degree from New York University.

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X-RAY MAKERS CONFER ON EQUIPMENT STANDARDS

Representatives of the Tuberculosis Control Division, U. S. Public Health Service; the National Electric Manufacturers Association, and various companies making X-ray and associated equipment met recently in New York City to explore the possibilities of standardizing design and specifications for the replaceable parts of photofluorographic X-ray units.

Special tests and study of the equipment now on the market will be conducted by the Division's experimental laboratory at Rockville, Md., and additional conferences will be held with technical personnel designated by various manufacturers, for evaluation of the laboratory findings.

When final specifications have been evolved, and the most suitable standard equipment decided upon, the recommendations of the laboratory will be followed in replacing X-ray equipment in Division-operated centers.

Results and recommendations reported by the laboratory will be made available to all health departments so that the benefits of this research may become widespread.

RAIL WORKERS X-RAYED

THE BALTIMORE & OHIO RAILROAD CO.

BALTIMORE-1, MARYLAND

AN X-RAY OF YOUR CHEST

The U. S. Public Health Service, the Baltimore City Health Department and the Maryland T. B. Association are cooperating in making X-Ray photos of the chests of Baltimore citizens, without charge. Already most of the employees of the city's largest industries have had these photos made. Now, the Baltimore and Ohio wishes to give its employees the same opportunity.

The purpose is to find out if these photos show any signs of tuberculosis. We may feel perfectly well and yet have a T. B. infection in its early stage. The X-Ray discovers this. We learn of the infection and can take remedial measures to stop it and restore our health.

The X-Ray equipment will be installed first in the Assembly Room of the 5th floor, B&O Central Building, and employees will report there by groups, according to a schedule to be furnished department heads, beginning at 10 a.m., Monday, July 23. The project will be continued later in the Annex Building, at Camden Station, Mt. Clare and Riverside, and other centers of B&O activities in Baltimore.

Major M. S. Shiling, of the U. S. Public Health Service, is in charge and will be assisted by members of the medical staff of the B&O.

Taking advantage of this offer to have our chests X-Rayed is, of course, purely voluntary on the part of the individual. However, doing so takes but a few minutes, and is definitely in the interest of the individual and our citizenship as a whole. It is to be hoped that officers and employees will take advantage of this opportunity, 100%.

E. V. MILHOLLAND, M. D.
Medical and Surgical Director, Relief Department

The Baltimore and Ohio Railroad, oldest in the country, established a new "first" on July 24 when it became the first major railroad to provide free chest X-ray for its workers. The X-ray unit used, a 35mm. machine, is owned by the Maryland Tuberculosis Association and is operated in Baltimore under the joint auspices of the association, the Baltimore health department and the U. S. Public Health Service. The survey of railroad employees was under the direction of Dr. M. S. Shiling, USPHS, assisted by members of the medical staff of the B&O. Above is a special notice posted by the company throughout its offices to publicize the survey.

Negro Essay Contest

Thirty-two prizes announced —Oklahoma school wins first place for second consecutive year

Frances E. Smith, 17-year-old student at the J. C. Corbin High School, Pine Bluff, Ark., has been awarded first prize for the best individual high school essay in the 1945 Negro Essay Contest, sponsored by the National Tuberculosis Association and its affiliated associations throughout the United States. Miss Smith, who will graduate next year, will receive a gold medal and a $100 college scholarship. She plans to attend Fiske University and will major in music.

First prize in the contest for college students, a gold medal and $50, went to Mrs. Christine J. Dillard, second-year student at Virginia State College, Petersburg, Va. The 9[7] Science Class of Carver Junior High School, Tulsa, Okla., won first prize for the second consecutive year in the high school class project group. The class will receive $75 as well as a set of books which will be added to a tuberculosis library established by last year's prize money.

Committee of Seven

Twenty-nine additional awards were announced by the judging committee headed by Dr. Charles S. Johnson, director, Department of Social Sciences, Fiske University, Nashville, Tenn. Members of the committee were: Mollie C. Faison, educational coordinator, Tuberculosis League of Pittsburgh, Pa.; W. Roderick Brown, M.D., Pittsburgh, Pa.; Mrs. Ruth Logan Roberts, chairman, Harlem Tuberculosis and Health Committee, New York, N. Y.; A. W. Dent, president, Dillard University, New Orleans, La.; Mrs. Bertell Collins Wright, director, Negro health work, Essex County Tuberculosis League, Newark, N. J., and Agnes Fahy, associate, Public Relations Service, NTA.

In addition to the thousands of students participating, at least a quarter of a million people in 25 states were reached by the contest, the judges estimated. Essays were judged on a state-wide basis, and the first three state winners in the three groups submitted for national judging.

WINS SCHOLARSHIP

Frances E. Smith, Pine Bluff, Ark., winner of first prize for the best individual high school essay in the 1945 Negro Essay Contest.

Subjects in the contest for college students were: "Old vs. New Attitudes in My Community Regarding Tuberculosis," "How the Home, School and Community Can Participate in the Control of Tuberculosis," and "The Negro Tuberculosis Problem, Past, Present and Future."

High school classes chose from the following topics: "What Do People Really Know About TB?" or "TB Information Please", and "A Tuberculosis Day Program," while the subjects for individual high school students included the first in the above list plus, "How the Home, School and Community Can Participate in the Control of Tuberculosis."

Other winners among college students were:

Second prize, $25, Marguerite H. Hartman, Dillard University, New Orleans, La.; third prize, $15, Olivia Irene Tucker, Maryland State Teachers College, Bowie, Md.; special award, $10, Tyrie Booker, Bradley College, Peoria, Ill., and Ruth Almyra Kirk, West Virginia State College, Institute, W. Va.; honorable mention, $5, Emma Lee Weathers, Kentucky State College, Frankfort, Ky.; Mary E. Skinner, Elizabeth City State Teachers College, Elizabeth City, N. C.; Audrey J. Lawson, Houston College for Negroes, Houston, Texas; Albert Mackey, Florida A. and M. College, Tallahassee, Fla.; Delia E. Walker, Paine College, Augusta, Ga.; Millicent A. Gumbs, Wilberforce University, Wilberforce, Ohio; Mrs. Bernice M. Rodgers, Lincoln Junior College, Kansas City, Mo., and Juanita Fitzpatrick, Grand Rapids Junior College, Grand Rapids, Mich.

Other Awards

In the high school class essay group, the other awards were:

Second prize, $50, Junior B Class, Booker T. Washington High School, New Orleans, La.; third prize, $25, Science Club, Washington High School, Raleigh, N. C.; fourth prize, $15, a tie between Eleventh Grade, Laing School, Mount Pleasant, S. C., and the Sophomore Class, Walker-Grant High School, Fredericksburg, Va.; honorable mention, $5, 9H1 Class, David T. Howard School, Atlanta, Ga., and the students of the Booker T. Washington High School, Memphis, Tenn.

Additional prize winners in the individual high school essay group were:

Second prize, $50, Marianne L. Brown, John Harris High School, Harrisburg, Pa.; third prize, $25, Louise McVey, Thomas Jefferson High School, Los Angeles, Calif.; fourth prize, $15, Lillian Dunn, Orange County Training School, Chapel Hill, N. C.; special award, $10, Servonia Washum, McKinley High School, Canton, Ohio, and Betty Jean Lewis, Thomas Jefferson High School, Los Angeles, Calif.; honorable mention, $5, Frances Majors, Jackson Junior High School, Louisville, Ky.; Margaret Woodyard, Fosdick-Masten High School, Buffalo, N. Y.; Rosemary Hines, Central High School, Muncie, Ind.; Lois Simmons, St. Rita Academy, St. Louis, Mo.; Kenneth McGaughey, Abilene High School for Negroes, Abilene, Texas, and Mary Laury, Eustis Vocational High School, Eustis, Fla.

THE PRESIDENT'S COLUMN

By WILL ROSS, President, NTA

WAR'S end brings new and different problems to the tuberculosis worker, none of which seem insurmountable.

Years of war, with high national prosperity, brought a flood of money into the treasuries of the tuberculosis associations; inability to get adequate personnel made it difficult to maintain existing programs, let alone expand them to meet the challenge of this new money. Hence, in most cases, this money is ready now to meet the problems of the post-war period. The fact that the money came in so abundantly is evidence in itself that the public believes in this tuberculosis program and intends to see it through to a finish.

Which is not to say that we can necessarily continue to look for the tremendous Seal Sale response of recent war years. On the other hand, there is no reason to take a gloomy view. I predict, in fact, an excellent Seal Sale this year. The feeling is general that we have some years of solid and profitable business ahead of us with large employment, and the evidence is clear that when the public has money, it will support the voluntary tuberculosis program.

The challenge is present then to every unit in this vast organization, from the smallest local association to the large state and local organizations, and to the National Tuberculosis Association itself, to accelerate the program. A prudent amount of reserves to meet possible emergencies should be provided, but beyond that the public gave this money to use, not to hold in treasuries or in securities. We have no right to ask for more money unless we spend intelligently the money that has been given.

In our concentration on war in this century we are likely to forget that hand in hand with man's development of methods to destroy himself has gone a revolution in our attitudes on the conservation of health. More than any one single factor, the tuberculosis movement has led the way in the development of public health. It did not create the public health movement, but it taught it how to function. Out of this organized campaign has come not only great progress in the control of tuberculosis, but understandings on public education which have been instrumental in controlling other communicable diseases, and putting some of them almost entirely out of business.

A little back-patting is in order, providing we recognize that the job ahead will require even greater concentration and intelligent effort if we expect to fully control tuberculosis. Any shorter goal should be unthinkable.

FIRST EDITIONS

The Greensboro Tuberculosis Association and the Forsyth County Tuberculosis Association, both of North Carolina, have recently issued their first news letters to members and directors of the associations. The Greensboro news letter is entitled *Christmas Seals at Work*, the Forsyth paper, *News Letter*.

ONE YEAR — 17,000 X-RAYED

More than 17,000 persons were X-rayed during the past year in industrial surveys conducted by the Denver (Colo.) Tuberculosis Society, according to *Healthy Manpower*, the society's publication. The industrial program was suspended on July 31 but will be resumed in January 1946.

AMERICAN SEAL DESIGN USED BY OTHER COUNTRIES

Tuberculosis control programs in seven countries and colonies outside the United States will be financed in 1946 by the sale of Christmas Seals bearing designs originating in this country, according to C. L. Newcomb, director, Seal Sale, National Tuberculosis Association.

The Anti-Tuberculosa Colombiana, Republic of Colombia, South America, which held its Seal Sale in August, used for the first time a seal designed and printed in the United States. The seal is a red and green adaptation of that used here in 1943, designed by Andre Dugo. Mr. Dugo's design was revised by Gabriel Audin and was issued in two and five cent denominations.

The Canadian Tuberculosis Association reports that the 1945 Seal, designed by Park Phipps for the NTA, will be used in Canada, England, British Guiana, Jamaica and Newfoundland. It is also likely, according to the Canadian association, that the American design may be used this year in the crown colony of Bermuda by the newly organized Bermuda Tuberculosis Association conducting its first Seal Sale.

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5,500 X-RAYS IN 5 WEEKS— TAKEN BY DENVER ASSN.

The Denver (Col.) Tuberculosis Society gave chest X-rays to 5,500 people over a five-week period, according to *News*, publication of the Denver Tuberculosis Society.

Among those X-rayed were 2,050 workers from the Denver Continental Modification Center. Other firms whose employees benefited from the case-finding program were: May Company Department Store (585 workers X-rayed), Shwayder Brothers Luggage Company (475), Y.W.C.A. and Y.M.C.A. groups (671), U. S. Post Office (825), Air Lines at Stapleton Air Port (265), Presbyterian Hospital (160), Continental Can Company (150) and St. Luke's Hospital (336).

TB Patients Aided

Quality of state vocational service improves and number of clients increases

The table on the opposite page gives the number of clients with a disability imposed by pulmonary tuberculosis who were aided by state services for vocational rehabilitation in 1941, 1942, 1943 and 1944. While there is no present method of counting the additional patients who solve their problems of post-hospital adjustment unaided, or those who are aided by counselors employed by voluntary associations, the table illustrates a trend by available objective evidence. The total of patients thus served in 1944 is, roughly, six times the number served in 1934. The tabulation by states discloses progress and lag in individual areas.

Field studies by National Tuberculosis Association staff personnel disclose, along with more service, notable improvements in quality of service. In 1944 there was far more cooperation between rehabilitation counselors and physicians than was usual a decade earlier. The definite physical demands of proposed training and placement objectives have received increasing attention. Industry has cooperated in widening the accepted range of jobs with the result that mass "processing" of applicants for a half dozen substandard jobs is on the decline and individual selective treatment leading to appropriate employment increases.

HOW TO FIND YOUR REHABILITATION QUOTA

If American communities can multiply the number of vocational rehabilitations of the tuberculous six times in ten years, how many more patients can be aided in this way? What vocational rehabilitation quota may be suggested by tuberculosis workers?

The number of annual vocational rehabilitations achieved for persons who have overcome their tuberculosis should reach, in the years just ahead of us, the number of annual deaths in the area in question. This quota can be expected as case-finding, treatment and rehabilitation are welded into a continuing program by research, education and promotion.

The formula upon which this quota is based is obtained by two arithmetical steps which come back to where they begin. Multiply the number of annual deaths by ten to find the approximate prevalence of tuberculosis. Divide the result by ten to obtain an estimate of the number of patients who, according to experience, need vocational rehabilitation service in order to find employment suitable to their physical capacities and potential skills.

No state and locality is likely to reach this quota overnight. But education, demonstration and systematic referrals can bring this goal within reach far more rapidly than past increases were achieved. Back of such efforts today are more experience, more trained personnel, more funds, more research and more public interest.

The tuberculosis associations may claim some credit for a program of education and promotion which they have sustained in many states. This has encouraged official agencies to include the tuberculous more frequently in their programs. It has helped to make the availability of service known to doctors, nurses, patients and to other agencies. The aid rendered by their own three score rehabilitation workers in adapting services originally developed for orthopedic and industrial accident disabilities to a very different problem of occupational adjustment has been substantial.

The suitable adjustment and placement of each patient improves the morale and the subsequent employment opportunities of other patients. When planned with expert medical advice, it can become a barrier against the recurrent, reactivating, relapsing tendencies in a disease which includes this final hazard in the total problem of effective control.

PERIODIC X-RAY PREDICTED

Periodic chest X-rays will become a national habit, generally recognized in years to come to be as important as periodic dental examinations, according to the United States Department of Labor in a recent report. The report forecasts a growing post-war demand for the services of women skilled in the use of X-ray equipment.

HEALTH INSTITUTE

Aims and methods of the Tuberculosis Control Division and other U. S. Public Health Service programs were presented at an orientation institute held recently at Bethesda, Md., for Negro health educators. Lectures were given by administrative personnel from each division, supplemented by talks by various guest speakers.

NEW TB ASSOCIATIONS

Five new tuberculosis associations have been formed during recent months in Iowa, bringing the number of county organizations in the state up to 95 and leaving but four counties without functioning associations. The new associations are in the counties of Wright, Buena Vista, Allamakee, Wapello and Sac.

Persons with a history of pulmonary tuberculosis who have completed vocational rehabilitation service, under the Federal-State Rehabilitation Program, classified by state: 1941-1944.

STATE	Tuberculous persons who have completed rehabilitation service			
	1944	1943	1942	1941
Continental United States	**2560**	**2994**	**1843**	**1244**
Alabama	20	16	9	7
Arizona	21	27	12	19
Arkansas	21	23	7	1
California	357	462	362	271
Colorado	14	32	41	17
Connecticut	120	100	114	65
Dist. of Columbia	108	88	39	33
Delaware	16	12	6	7
Florida	57	61	27	12
Georgia	32	51	7	7
Idaho	3	5	1	2
Illinois	83	96	57	32
Indiana	37	47	34	25
Iowa	11	16	26	18
Kansas	11	8	3	[1]
Kentucky	65	91	24	18
Louisiana	35	41	6	2
Maine	19	16	7	7
Maryland	3	4	4	2
Massachusetts	52	46	43	32
Michigan	140	184	63	66
Minnesota	58	131	93	45
Mississippi	26	11	5	3
Missouri	52	76	63	37
Montana	4	8	6	9
Nebraska	8	8	2	2
Nevada	—	—	—	—
New Hampshire	8	10	2	1
New Jersey	50	35	32	13
New Mexico	5	15	8	8
New York	204	274	147	82
North Carolina	104	94	69	31
North Dakota	2	7	—	3
Ohio	112	74	59	34
Oklahoma	29	39	17	12
Oregon	18	37	46	38
Pennsylvania	99	146	94	45
Rhode Island	19	8	9	2
South Carolina	32	28	5	5
South Dakota	1	4	3	1
Tennessee	72	78	19	15
Texas	148	183	111	97
Utah	1	10	—	—
Vermont	12	5	6	1
Virginia	76	68	32	18
Washington	30	42	33	19
West Virginia	23	15	5	6
Wyoming	1	—	2	—
Wisconsin	141	162	83	74
Hawaii	31	49	42	28
Puerto Rico	1	—	—	1

[1] Did not participate in this year.
Source: Office of Vocational Rehabilitation, Washington, D. C.

Rehabilitation

Broad assistance program advocated for all physically handicapped

Tuberculosis control cannot be effective without a program of assistance which will include rehabilitation beginning early in the period of illness and continuing until the patient is again economically self-sufficient, according to Dr. Herman E. Hilleboe, Chief, Tuberculosis Control Division, U. S. Public Health Service.

Cites Denmark Plan

Testifying recently in Washington before the Kelley Sub-Committee on Aid to the Physically Handicapped, in the House of Representatives, Dr. Hilleboe cited the Denmark Plan of social security and advocated a broadening of our assistance program to include similar benefits, not only for the tuberculous, but for all persons needing rehabilitation because of physical disability.

Family Subsidies

Adequate subsidy for the family during the period of treatment and rehabilitation, an important point in the Danish program, was also stressed by Dr. Hilleboe who pointed out that it is an integral part of the four objectives of the Tuberculosis Control Division.

Also testifying before the subcommittee, Holland Hudson, director, Rehabilitation Service, National Tuberculosis Association, stated that while the state vocational rehabilitation agencies had demonstrated the possibility of such service for the tuberculous, the volume of such service bears but a remote relationship to the need for its further expansion. Further research and strengthening of personnel policies, he said, are among the means by which Congress can further the service's improvement.

NTA AWARDS THREE TRUDEAU SCHOLARSHIPS

Three scholarships of $100 each were awarded by the National Tuberculosis Association for the 31st session of the Trudeau School of Tuberculosis which opened on Sept. 10. Recipients of the scholarships were Dr. Lawrence M. Zell, Bartow, Fla.; Dr. Stuart McWhorter, Farmingdale, N. J., and Dr. C. A. Kruse, Seattle, Wash.

An additional scholarship, made available by the Trudeau School to a candidate chosen by the NTA, was awarded to Dr. Hubert P. Colton, Middleton, Mass.

The course consists of four weeks study at Saranac Lake, N. Y., after which two weeks of supplemental (and optional) work is offered at Bellevue Hospital, New York City.

50 Years of X-Ray

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anode, or positive electrode, and hit the glass at the end of the tube. Their impact upon the glass produced the rays which Roentgen observed and designated as "X."

In the 50 years since Roentgen discovered the X-ray, research undertaken on many fronts has led to vast improvements in radiographic and fluoroscopic apparatus. Modern X-ray equipment seems to bear little resemblance to Roentgen's simple tube and generator, yet both operate on the principle of electrons hitting a target. Today the target is metal, not glass.

Industrial—Medical Research

The history of the X-ray reveals an interesting study of how industrial research has worked side by side with medical science in solving problems related to using this phenomenon for the benefit of mankind.

The X-ray has proved a valuable aid to physicians in checking bone injuries, in diagnosing disorders of the digestive organs, in the treatment of some skin diseases and acute infections. Dentists commonly X-ray teeth to find hidden cavities and other defects.

Industry has likewise used the X-ray to advantage. Roentgen's rays are employed to find flaws in metal castings—and even to locate foreign matter in the inspection of food products.

The potentialities of the X-ray in the diagnosis of tuberculosis were recognized almost immediately, but it was many years before the X-ray was widely used to detect the presence of the disease.

A book by A. Beclere was published in Paris in 1899 on "The Rays of Roentgen and the Diagnosis of Tuberculosis." In it, the author refers to a paper read by Professor Bouchard on Dec. 14, 1896 before the Academy of Sciences in Paris on "Rays of Roentgen Applied in the Diagnosis of Tuberculosis."

Several factors interfered with the immediate application of the X-ray in diagnosing tuberculosis on a broad basis. Equipment was cumbersome and expensive, and the poverty of experience in reading chest X-ray pictures kept physicians from placing too much reliance upon them.

Technical Improvements

In the past 35 years, however, technical improvements have been made steadily in equipment. At the same time, medical schools have introduced courses in X-ray interpretation to train the student in reading X-ray films.

One of the first important improvements in X-ray equipment resulted from the development of a new type of tube in 1913 by Dr. William David Coolidge. Another event which affected the development of X-ray machinery was the invention of celluloid, which made possible the substitution of flexible film for the more expensive glass photographic plate.

Further study of the X-ray and its uses led to the production of small units which could be operated with miniature film—35 mm., 70 mm. or 4" x 5". These small machines are now manufactured as portable units and as part of mobile units, fully equipped for the taking of X-ray pictures and developing the film. Whereas in 1896 the average time of exposure was 20 minutes, today it is a fraction of a second.

When World War I broke out, X-ray was still in its infancy. Men inducted into the armed forces were not required to have X-ray examinations. Many of them, it was later learned, had tuberculosis when they entered the Army or Navy, or they developed it while in service. As a result, the government has spent a billion dollars in the care of tuberculous veterans of that war. This care includes hospitalization, vocational training, compensation and insurance.

Shortly after World War I, increased knowledge about tuberculosis and the development of better X-ray equipment led to widespread use of the X-ray in diagnosing chest conditions.

In World War II, chest X-ray examinations of all men called under the Selective Service Act became routine early in 1942. By this time, miniature film made possible the rapid X-raying of large groups.

Low-Cost X-ray

The availability of small X-ray units, at comparatively little cost, has also enabled tuberculosis associations, the U. S. Public Health Service, health departments and industry to make mass X-ray surveys of industrial workers and other groups of the population. In the past two years, the U. S. Public Health Service has X-rayed approximately 1,000,000 persons, while thousands more have been examined under the auspices of tuberculosis associations.

Before Roentgen discovered the X-ray 50 years ago this November, the diagnosis of tuberculosis was largely a matter of guess work—

and that usually came after the disease was in an advanced stage.

Today, with the aid of Roentgen's ray, diagnosis is exact and can be made while the disease is still in an early stage. As a result of Roentgen's discovery, thousands of persons are alive today because their disease was diagnosed before it was too late for recovery.

Chemotherapy in TB

. . . *Continued from page 152*

will be denied any valuable secret remedy.

Newspaper reporters and authors of magazine articles recognize the news value of scientific discoveries and may closely watch medical journals for information of interest to the general public. Occasionally their sources of information have been dependent on data less authoritative than that published in medical journals. Research workers are sometimes chagrined and patients are sometimes confused or actually misled by premature exploitation of scientific reports by the popular press. It is especially serious when theories and opinions are confused with facts and proved principles.

Human lives may be lost needlessly if patients who have tuberculosis choose to forsake or refuse well-established methods of treatment in the hope of receiving remedies inadequately tried or of unproved effectiveness. When patients and their relatives become confused they should seek the advice of their physician who has access to medical journals and also can secure information at first hand. Helpful literature and advice are also available through health departments and tuberculosis associations.

15,000 X-RAYED

More than 15,000 persons in the boroughs of Manhattan, Bronx and Richmond were X-rayed by the New York (N.Y.) Tuberculosis and Health Association during the fiscal year April 1, 1944 - March 31, 1945, according to the annual report of the association.

PEOPLE

Mrs. Mary E. Buzzardt has taken over the duties of executive secretary of the New Hanover County (N. C.) Tuberculosis and Health Association. Mrs. Buzzardt, a former Red Cross worker, attended the North Carolina State Institute for Tuberculosis Workers in July.

Mrs. Maria Bates Carpenter joined the staff of the Essex County (Mass.) Health Association Sept. 1 as its first educational secretary. Mrs. Carpenter received her Certificate in Public Health from Massachusetts Institute of Technology.

Miss Helen A. Newhall, R.N., of Marblehead, Mass., has joined the staff of the Essex Sanatorium, Middleton, Mass., to help establish a cooperative plan in the follow-up of persons with a history of tuberculosis. Funds for this position will be supplied by the Division of Tuberculosis Control, U. S. Public Health Service.

Lt. Vera B. Griffin, former secretary, Essex County (Mass.) Health Association, Inc., should now be addressed as follows: N752224, 16th General Hospital, APO 228, c/o Postmaster, New York, N. Y.

Lt. Kathleen Sullivan, formerly staff member of Southern Middlesex (Mass.) Health Association, Inc., has a new address—N754239, U.S.A. General Hospital, Officers' Mail Room, Camp Edwards, Mass.

Miss Kharis Mayers, R.N., formerly of Baltimore, Md., has joined the staff of the Florida Bureau of Public Health Nursing as tuberculosis consultant.

Dr. A. T. Cole has been appointed medical director of the Hillsborough County (Fla.) Tuberculosis Sanatorium. Dr. Cole was formerly medical director of Outlook Sanatorium, Urbana, Ill.

Leo E. Brown is the new health education secretary of the Erie County (Pa.) Tuberculosis and Health Association. Mr. Brown was formerly supervising principal of the Marienville public schools.

Mrs. Claudia J. Hurt has joined the staff of the North Carolina Tuberculosis Association as a field worker. Mrs. Hurt is a former school teacher.

Dr. Ann P. Kent has been appointed to the staff of Alaska's health unit ship, Hy-gene, as field physician. Dr. Kent succeeds Dr. N. Berneta Block, director of the Division of Maternal and Child Care and Crippled Children's Services.

Mrs. Pauline Flint Waddell is information secretary of the Bronx (N.Y.) Tuberculosis and Health Committee. She succeeds Miss Evelyn Rhodes.

Miss Pearl Leitzsey, superintendent of nurses, South Carolina Sanatorium, completed her twenty-fifth year of nursing at the hospital on July 31.

Robert N. Cox is the new executive secretary of the Kane County (Ill.) Tuberculosis Association. He succeeds Richard L. Lea who is now executive secretary of the Wayne County (Mich.) Tuberculosis Association.

Miss Bernice Knapp and Mrs. Mae Boller are the new full-time executive secretaries of the Woodbury County (Iowa) Tuberculosis Association and Black Hawk County (Iowa) Tuberculosis Association, respectively.

Laurence R. Kirk, Sacramento, has been chosen president of the California Conference of Tuberculosis Secretaries, the executive committee of the organization has announced. Mr. Kirk succeeds Miss Alice Kratka. Other officers of the conference are Miss Mary Ellen Hagen, Kern County, vice president and Mrs. Mary C. French, Riverside, secretary-treasurer.

PEOPLE

The Rev. Walter Folger Greenman died recently at his home in West Newton, Mass. Mr. Greenman was an honorary vice-president of the Massachusetts Tuberculosis League, a founder and former president of the Milwaukee, Wis., central council of social agencies and a former board member of the Wisconsin Tuberculosis Association.

Miss Eleanor Criger, formerly executive secretary of El Paso County (Colo.) Tuberculosis Association, has recently been appointed consultant in medical social work to the Office of the Chief, Tuberculosis Control Division, U. S. Public Health Service. Miss Criger will formulate a program of inter-agency cooperation and education in the field of social service for the tuberculous, at federal and state levels.

G. Donald Buckner is the new secretary of the New York City (N.Y.) Tuberculosis and Health Association Committee on Tuberculosis. Mr. Buckner, formerly executive secretary of the Southern Worcester County (Mass.) Health Association, succeeds Bernard J. Coleman, now director of the Council of National Jewish Tuberculosis Institutions in Denver, Colo.

Dr. J. Vincent Sherwood, formerly assistant medical director and coordinator of the medical center at Irene Byron Sanatorium, Fort Wayne, Ind., is the new medical superintendent at Sunshine Sanatorium, Grand Rapids, Mich. Dr. Sherwood, a member of the American Trudeau Society, succeeds Dr. Everett W. Gaikema.

Mrs. Agnes F. Meliss is the new director of the Dollar X-ray Service of the Queensboro (N.Y.) Tuberculosis and Health Association, succeeding Miss Frances R. Kurtzman. Miss Laura Romanski has become director of the association's Consultation Chest Clinic, Miss Beryl Anderson succeeds Mrs. Julie E. Miale as director of the Industrial Chest Service and Miss Cecelia M. Welsh has been appointed assistant to Miss Anderson.

Dr. Joseph R. Morrow, former president and executive committee member of the New Jersey Tuberculosis League, will retire from the position of medical director and superintendent of Bergen Pines on Dec. 1. Dr. Morrow was a delegate to The Hague at meetings of the International Union Against Tuberculosis in 1932, and is a past president of the American Hospital Association, the New Jersey Hospital Association and the New Jersey Health and Sanitary Association.

The October Review

The *American Review of Tuberculosis* for October carries the following articles:

Streptomycin in Experimental Tuberculosis, by William H. Feldman, H. Corwin Hinshaw and Frank C. Mann.

Streptothricin in Experimental Tuberculosis, by William H. Feldman and H. Corwin Hinshaw.

Chemotherapy of Sulfones and Sulfonamides in Experimental Tuberculosis, by M. I. Smith and W. T. McClosky.

Anatomical Studies on Human Tuberculosis.
XIX. Protracted Primary Tuberculosis in the Adult, with Some Observations on "Lymphoglandular - Endogenous Reinfection (Ghon)," by Kornel Terplan.

Eosinophilia in Silicosis, by William J. Habeeb.

Tuberculosis of the Tongue, by L. L. Titche.

Founders of the National Tuberculosis Association, by Robert G. Paterson.

American Trudeau Society:
Report of the Committee on Tuberculosis in Industry.
Report of the Committee on X-ray Apparatus and Technique.

Abstracts.